

Quick Guide

Groundwater Disinfection Waiver Compliance

November 2010
Version 1



PROVIDED TO PUBLIC WATER SYSTEMS FROM THE COMPLIANCE ASSURANCE SECTION
OF THE WATER QUALITY CONTROL DIVISION

Background

Disinfection of drinking water is one of the major public health advances in the 20th century. One hundred years ago, typhoid and cholera epidemics were common throughout American cities. Disinfection was a major factor in reducing these epidemics.

To this end, waivers from disinfection requirements are not appropriate except for systems that have shown a consistent, long-term history of operating in a manner that is fully protective of public health without the barrier of disinfection and can demonstrate continuing adherence to high standards of source and distribution system protection. Increased requirements and oversight of systems that continue to operate under disinfection waivers is appropriate.

The issuance of waivers to new water systems poses too high a risk to public health given that new systems cannot clearly demonstrate a long-term history of being able to successfully operate without disinfection. Furthermore, it is not appropriate for systems that are currently providing chemical disinfection to discontinue such disinfection thereby removing a demonstrably effective primary barrier to microbial contamination. Systems serving populations susceptible to microbial contamination, specifically schools and child care centers, are unsuitable to operate without chemical disinfection due to the increased vulnerability to illness these types of populations face.

Issuance of Groundwater Disinfection Waivers for Colorado Public Water Systems

Colorado Primary Drinking Water Regulations Article 13

- Applicability: All public water systems must continuously chemically disinfect unless the system is operating pursuant to a disinfection waiver.
- Public water systems operating pursuant to a disinfection waiver must comply with the provisions of section 13.2(d) of the *Colorado Primary Drinking Water Regulations*.
- As of November 30, 2010 no new disinfection waivers will be issued to public water systems.

General Requirements for Colorado Public Water Systems with Groundwater Disinfection Waivers

Systems operating pursuant to disinfection waivers must meet the following provisions:

- Must only serve water from groundwater sources.
- Must provide publication of a special notice. (see below for more details)
- Must be operated by certified operator.
- Must have the ability to provide an emergency disinfectant residual concentration.
- Must keep records of all chlorination activities.
- Must have a Monitoring Plan. (see reverse for more details)
- Must submit for Department approval a Distribution System Protection Plan by October 1, 2011 and operate in accordance with the Department approved Distribution System Protection Plan by May 1, 2012. (see reverse for more details)
- Must submit for Department approval a Source Water Protection Plan by October 1, 2011 and operate in accordance with the Department approved Source Water Protection Plan by May 1, 2012. (see reverse for more details)

Public Notification

Community systems must provide annual notice to the public to inform consumers that the system operates under a waiver from disinfection. This can be done using the Consumer Confidence report.

Non-community systems must continuously post notice to the public to inform consumers to that the system operates under a waiver from disinfection.

Notice must contain the following language:

"[Name of groundwater system] has a waiver from disinfection requirements and serves well water that has not been chlorinated."



Properly constructed wellhead. Photo by Jocelyn Mullen.

PLANS

Protection Plan Requirements

Each of the following plans are due to the Water Quality Control Division for review no later than October 1, 2011 and must be implemented no later than May 1, 2012. Each plan must include, at a minimum, the following:

DISTRIBUTION SYSTEMS

- Description of distribution system operation and maintenance practices (e.g. flushing schedules, scheduled upgrades, disinfection schedules, etc.).
- Description of hazardous cross-connection control program that meet the requirements of Article 12 of the Colorado Primary Drinking Water Regulations.
- Identification of potential point of entry for hazards and/or contaminants into the storage and distribution system and the control measures to mitigate intrusion.
- Description of monitoring locations and parameters used to verify control measures are effective.
- Description of incident response procedures to be used in the case of a distribution system breach or contamination event which must include sampling protocol and flushing procedures.

SOURCE WATER

- Delineation of source water protection areas.
- An inventory of potential sources of contamination.
- Plan for management of potential contaminate sources.
- Well failure emergency and contingency plans.
- Capacity development plan for new wells.
- Description of the methods to be used to involve and educate the public during source water protection planning and implementation process.

EMERGENCY DISINFECTION

- Ability to provide emergency disinfectant residual.
- Emergency operating plan.

MONITORING PLANS

- System summary.
- Water Source Details
- Water Treatment Details
- Distribution System Details
- Individual Rule Sampling Plans

Additional Evaluations

- At any time the Water Quality Control Division may perform a sanitary survey of the water system.
- Existing and new groundwater sources may be subject to assessment source water monitoring or additional testing to ensure that the source is free from microbial contamination.
- The Water Quality Control Division may evaluate the wells and storage system to ensure they meet design and construction criteria.

Waiver Withdrawal

The following conditions may result in immediate waiver withdrawal and the system must then provide continuous chemical disinfection.

- Failure to comply with any waiver specific provisions of Article 13 of the Colorado Primary Drinking Water Regulations.
- Failure to correct significant deficiencies.
- Failure to comply with Article 5 - Microbial Contaminants.
- Failure to comply with triggered source water monitoring requirements of Article 13.
- Failure to comply with Article 12 - Hazardous Cross - Connection.
- Incidence of microbial disease originating from consumption of the system's drinking water.
- Situations or conditions that have potential to contribute to microbial disease incidence.
- A source is determined to be fecally contaminated.
- Other violations of the Colorado Primary Drinking Water Regulations.

Waiver Withdrawal Hearing Rights

- A system may request a hearing to contest the withdrawal of a waiver.
- Requests must be made in writing within 60 days of notice of the waiver withdrawal.



Chlorine injection system. Photo by Paul Kim.

Helpful Resources

- *Source Water Protection Plan Template:* www.cdphe.state.co.us/wq/sw/protectionplanningtemplate.html
- *Monitoring Plan Templates:* <http://www.cdphe.state.co.us/wq/drinkingwater/PublicWaterSystemReportingForms.html>
- *Emergency Preparedness information:* <http://water.epa.gov/infrastructure/watersecurity/emmerplan/index.cfm>

- *Distribution Systems: Best Management Practices:* http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_dist_system_08-25-06.pdf

Questions?

Contact the Water Quality Control Division:
303-692-3541 or
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Ask for your Groundwater Compliance Team.